Vinay S. Patil
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EDUCATION

Carnegie Mellon University (CMU) — Pittsburgh, PA
Master of Science in Electrical and Computer Engineering — May 2022
Selected Coursework: [Machine Learning, Deep Learning, Computer Vision]
CGPA: 3.6/4.0

Ramrao Adik Institute of Technology (RAIT) — Mumbai, Maharashtra, India
Bachelor of Technology in Computer Engineering — August 2018
CGPA: 3.8/4.0

SKILLS

Programming languages: Java, Python, Angular, React, R
Framework & Platforms: Git, Maven, Numpy, Scikit-learn, Pytorch, Pandas, Tensorflow, IBM MQ, Kafka, Qiskit
Database: MySQL, MongoDB

PROFESSIONAL EXPERIENCE

Carnegie Mellon University — Pittsburgh, PA
Research Assistant — February 2021 – Present
- Worked on designing efficient printed circuit board design optimized to minimize IR-drop across the board
- Implemented evolutionary algorithm combined with deep network and metaballs to improvise A* based baseline solution. Which reduced execution time by 50% and improved the convergence rate
- Collaborated in experiments by adding PCB designs and performed a comparative study of A* and new approach

J P MORGAN CHASE & CO. — Mumbai, Maharashtra, India
Software Engineer class II — July 2018 – January 2021
- Developed a generic solution that reduced on-boarding and logistic time needed for new clients from week to 2 days.
- Upgraded core transformation engine to support advance data formats such as proto amps and Json which saved manual coding, code replication and reduced the development time from 2 sprints work effort to 3 days
- Trained three new joiners in the team, by introducing and helping out with technical details of the project
- Received Q4-2018 (Excellent performing new joiner) and Q2-2019 (Excellent performer in the team) awards

Precision AutoWorkz — Mumbai, Maharashtra, India
Intern- Software Engineer — December 2016 – January 2017
- Digitalized automobile assembly shop the system allowed to generate reports, bills and track assembly orders
- Reduced customer support queries by 70% and allowed customers to get accurate time and cost estimates
- Designed intelligent ordering system that reduced 60% storage space and reduced wastage of old parts

PROJECTS

Carnegie Mellon University — Pittsburgh, PA
Quantum Image Classifier — October 2021 – December 2021
- Implemented image classifier based on quantum hadamard edge detection with the quantum image encoding
- Experimented on various quantum devices like Dwave, Qiskit, and simulators from amazon brackets.

Object Tracking in Videos — October 2021 – December 2021
- Implemented Lucas-Kandae optical flow detection to detect and track selected objects from the video
- Improvised implementation by handling anomalies using a combination of Matthew-baker and Lucas-Kanade method

Deep Network Compression — February 2021 – March 2021
- Implemented deep network compression using combination of quantization and compression achieving 20 times compression with a minimal drop of accuracy.
- Performed quantitative analysis on the baseline and compressed network using AlexNet, ResNet and VGG16
- Reduced memory footprint by 5% from new compression technique compared to a baseline model

Text Autocomplete using LSTM — February 2021 – March 2021
- Implemented a Recurrent Neural Network (RNN) trained on vocabulary and sentence to predict and generate next sequence of words after given part of sentence
- Trained Attention and LSTM model with 579 articles and achieved 78% accuracy in prediction on test dataset

Muktangan NGO — Mumbai, Maharashtra, India
Muktangan — November 2018 – July 2019
- Reorganized school systems operated under NGO with solution to track student progress and teacher's appraisal
- Provided daily/weekly/monthly intelligent report system which help NGO to predict funding and resources logistic

Ramrao Adik Institute of Technology — Mumbai, Maharashtra, India
Determine Document Relevance using Keyword Extraction (DDRKE) — August 2017 – July 2018
- Implemented a 3-stage search engine to scan-analyze-use the document, designed based on term frequency-inverse document frequency algorithm
- Designed QnA bot using natural language processing and document ranking system to find documents and answers

PUBLICATIONS

- "Determining Document Relevance using Keyword Extraction", IRJET Journal **[ref: P-ISSN: 2395-0072]** July 2018